



## NEMATX – HIGH-PERFORMANCE POLYMER 3D PRINTING

### Problem – Challenge

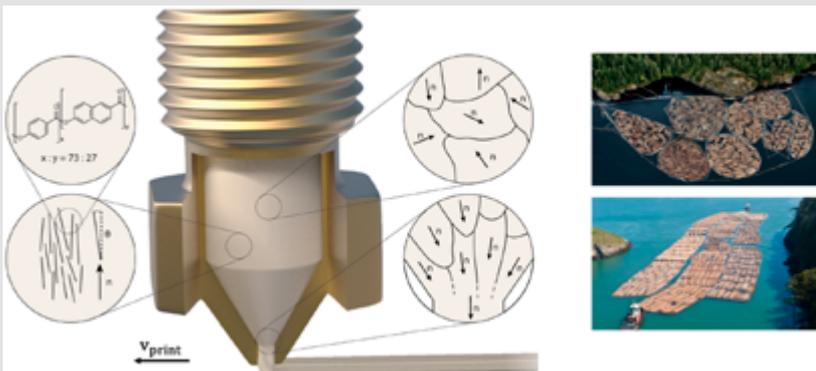
Innovative industrial companies often require technical products in comparably small quantities, where mass manufacturing is not a viable solution because of high initial costs and long lead times. But due to a lack of alternatives, companies are forced to use existing manufacturing solutions and to outsource their production to countries with low labor costs, followed by shipping of their products around the globe. A potential solution that has emerged over the past years is additive manufacturing, commonly referred to as 3D printing. But especially for polymer or plastic products, the quality of 3D printed parts is not yet good enough for the most demanding industrial applications

### Solution

NematX has set out to make industrial manufacturing more agile, competitive and sustainable. For this purpose, the ETH Spin-off has developed an industrial 3D printing platform with which they introduce a new and fully recyclable material class termed liquid crystal polymers (LCP). In combination with their in-house developed high-precision 3D printers based on the fused filament fabrication (FFF/FDM) technique, NematX can accurately control the material microstructure during printing and produce parts with a currently unmatched combination of manufacturing precision and part performance in polymer 3D printing. Besides excellent mechanical, thermal and chemical product properties, customers benefit from up to 20 times faster print speeds compared to the current state-of-the-art. The young startup's ambition is to help solve technical and societal challenges from deep sea to the outer space and they do this by pushing the current limits of industrial 3D printing with new and sustainable materials, swiss-precision hardware and a manufacturing solution that is competitive and at the same time resource-efficient.



Product samples from ETH Spin-off NematX. Their 3D printed LCP parts are designed to perform in the harshest industrial environments.



With their proprietary "Nematic 3D Printing" technology, NematX can accurately control the material microstructure of liquid crystal polymers (LCP) during the extrusion process.